Atti del XV Convegno Annuale **AIUCD**

Digitale e *Public Engagement*

Pratiche e prospettive nelle Digital Humanities

Cagliari 3-4-5 giugno 2026

a cura di

Cristina **Marras** | Andrea **Pergola** | Giampaolo **Salice**

UNICA
UNIVERSITÀ DEGLI STUDI DI CAGLIARI

DH.UNICA.IT
Centro interdipartimentale per l'Umanistica Digitale

ASSOCIAZIONE per l'INFORMATICA UMANISTICA e la CULTURA DIGITALE

ISBN 9791298618817

A cura di: Cristina Marras; Andrea Pergola; Giampaolo Salice (2026). *Digitale e* Public Engagement*: pratiche e prospettive nelle* Digital Humanities, Atti del XV Convegno Annuale AIUCD, Cagliari 3-5 giugno 2026, Università degli Studi di Cagliari.

Ultimo accesso agli URL in data 13 maggio 2026.
Last URL access May, 13 2026.

Si prega di notificare all'editore ogni omissione o errore si riscontri: segreteria [at] aiucd.org
Please notify the publisher of any omissions or errors found: segreteria [at] aiucd.org

Il programma del Convegno AIUCD 2026 è disponibile online:
https://www.aiucd2026.unica.it/companion/
The AIUCD 2026 Conference Program is available online:
https://www.aiucd2026.unica.it/companion/

I contributi pubblicati nel presente volume hanno ottenuto il parere favorevole da parte di valutatori esperti della materia, attraverso un processo di revisione anonima mediante *double-blind peer review*, effettuata dai membri del Comitato di Programma sotto la supervisione del Comitato Scientifico di AIUCD 2026.
All the papers published in this volume have received favourable reviews by experts in the field of DH, through an anonymous double-blind peer review, carried out by the members of the Programme Committee under the supervision of the Scientific Committee of AIUCD 2026.

Gli Atti del Convegno AIUCD 2026 sono pubblicati come raccolta dei contributi forniti direttamente dagli autori e dalle autrici. I file sono stati raccolti e assemblati senza interventi redazionali significativi da parte dei curatori.

The proceedings of the AIUCD 2026 Conference are published as a collection of contributions provided directly by the authors. The files have been collected and compiled without significant editorial intervention by the editors.

Il logo di AIUCD 2026 è opera di Raffaele Argiolas
The AIUCD 2026 logo was designed by Raffaele Argiolas
La copertina è stata realizzata da Giampaolo Salice
The cover was created by Giampaolo Salice

GENERAL CHAIRS

Giampaolo Salice | Università degli Studi di Cagliari | DH UNICA
Cristina Marras | CNR-ILIESI | AIUCD

COMITATO ORGANIZZATORE / ORGANIZING COMMITTEE

Il Comitato Organizzatore è composto da Giampaolo Salice (Università degli Studi di Cagliari), Cristina Marras (CNR-ILIESI), Raffaele Argiolas, Alessandro Capra, Giommaria Carboni, Andrea Pergola, Eleonora Todde (DH UNICA Università degli Studi di Cagliari), Christian D'Agata (Università di Catania), Francesca Frontini (CNR-ILC), Simone Rebora (Università di Verona), Marco Rospocher (Università di Verona), Laura Stochino (ISSASCO), Matteo Tatti e Alice Nozza (Associazione Itzokor).

***Iscrizioni** / Conference Registration*
Eleonora **Todde** – DH UniCa – Università degli Studi di Cagliari

Atti / Conference Proceedings
Andrea **Pergola** – DH UniCa – Università degli Studi di Cagliari

***Comunicazione** / Communication*
Raffaele **Argiolas** – DH UniCa – Università degli Studi di Cagliari

***Promozione** / Promotion*
Giommaria **Carboni** – DH UniCa – Università degli Studi di Cagliari

***Tecnologo dell'Evento** / Event Technologist*
Alessandro **Capra** – DH UniCa

Organizzazione locale

Dipartimento di Lettere, Lingue e Beni Culturali, Università degli Studi di Cagliari, Ufficio Amministrativo: Serena Serra, Giulia Cadoni, Claudia Serri

COMITATO SCIENTIFICO / SCIENTIFIC COMMITTEE

Il Comitato Scientifico del convegno AIUCD 2026 è composto dai Chairs di Programma e dai Chairs delle cinque aree tematiche.

Program Chairs

Giampaolo Salice | Università degli Studi di Cagliari | DH UNICA
Cristina Marras | CNR-ILIESI | AIUCD

DH e co-costruzione del sapere con le comunità: sfide, metodi, strumenti / *DH and co-construction of knowledge with communities: challenges, methods, tools*

Arianna Ciula | King's Digital Lab, London
Greta Franzini | EURAC, Bolzano

Archivi ed edizioni: descrizioni aumentate, accessibilità e sistemi informativi / *Archives and editions: augmented descriptions, accessibility, and information systems*

Federico Valacchi | Università di Macerata
Paolo Monella | Università Kore Enna | AIUCD

Testualità digitali: prospettive, sviluppi e sperimentazioni / *Digital textualities: perspectives, developments, and experimentations*

Simone Rebora | Università di Verona | AIUCD
Alessandro Adamou | Biblioteca Hertziana

Rappresentazione di Dati e Conoscenza / *Data and Knowledge Representation*

Francesca Tomasi | Alma Mater Studiorum – Università di Bologna
Angelo Mario Del Grosso | CNR-ILC

Memorie, storia e patrimoni culturali digitali / *Tangible and Intangible Digital Heritage*

Michela Tardella | CNR-ILIESI
Enrica Salvatori | Università di Pisa

COMITATO DI PROGRAMMA / PROGRAM COMMITTEE

Stefano Allegrezza (Università di Macerata), Laura Antonietti (Université de Versailles Saint Quentin en Yvelines - Université Paris-Saclay), Alessio Antonini (Open University), Liborio P. Barbarino (Università di Catania), Nicola Barbuti (Università di Bari "Aldo Moro"), Stefano Bazzaco (Università di Verona), Andrea Bellandi (CNR-ILC), Giulia Benotto (CNR-ILC), Monica Berti (Leipzig University), Mario A. Bochicchio (Università di Bari "Aldo Moro"), Andrea Bolioli (Ricercatore indipendente), Marco Bombieri (Università di Verona), Flavia Bruni (Università di Chieti-Pescara), Marina Buzzoni (Università Ca' Foscari di Venezia), Alberto Campagnolo (KU Leuven), Vittore Casarosa (CNR-ILC), Raffaele Cioffi (Università di Napoli Federico II), Vincenzo Colaprice (Università di Torino), Francesca Congiu (Università degli Studi di Cagliari), Giuseppe Consolo (Università degli studi di Napoli, Federico II), Christian D'Agata (Università di Catania), Giulia D'Agostino (TU Darmstadt), Elisa D'Argenio (HUN-REN Hungarian Research Centre for Linguistics), Davide Dainese (Alma Mater Studiorum Università di Bologna), Stefano Dall'Aglio (Università Ca' Foscari Venezia), Marilena Daquino (Alma Mater Studiorum Università di Bologna), Mauro De Bari (Università di Bari "Aldo Moro"), Angelo M. Del Grosso (CNR-ILC), Matteo Di Cristofaro (UniMore), Francesca Di Donato (CNR-ILC), Giorgia Di Marcantonio (Università di Macerata), Giorgio Maria Di Nunzio (Università di Padova), Roberto Evangelista (CNR-ISPF), Stefano Ferilli (Università di Bari "Aldo Moro"), Franz Fischer (Università Ca' Foscari di Venezia), Greta H. Franzini (EURAC), Francesca Frontini (CNR-ILC), Daniele Fusi (Università Ca' Foscari di Venezia), Mariangela Giglio (Alma Mater Studiorum Università di Bologna), Tiago Luis Gil (University of Brasilia), Michela Giordano (Università degli Studi di Cagliari), Luca Giovannini (University of Potsdam), Milena Giuffrida (Università di Catania), Giovanna Granata (Università degli Studi di Cagliari), Edmondo Grassi (Università Telematica San Raffaele Roma), Miryam Grasso (Università di Catania), Piergiovanna Grossi (Università di Verona), Marina M. Guglielmi (Università degli Studi di Cagliari), Alessandro Iannella (Università degli Studi di Milano), Sabrina Iorio (Università Napoli Federico II), Michele Lacriola (Università di Siena), Alessandro Laruffa (ISSTOR), Anna Mambelli (UniMore), Francesco Mambrini (Università Cattolica del Sacro Cuore), Francesco Mameli (Università degli Studi di Cagliari), Lorenzo Mancini (CNR-ILIESI), Anna Maria Marras (Università di Torino), Cristina Marras (CNR-ILIESI), Pietro Mazzarisi (Università di Trieste), Barbara McGillivray (King's College London), Federico V. Meschini (Università della Tuscia), Alessio Miaschi (CNR-ILC), Giulia Miglietta (Università del Salento), Paolo Monella (Università Kore di Enna), Rossana Morriello (Università degli Studi di Firenze), Giulia Murgia (Università degli Studi di Cagliari), Enrico Natale (infoclio.ch), Sebastiana Nocco (CNR-ISEM), Serge Noiret (AIPH), Giuseppe Palazzolo (Università di Catania), Mafalda Papini (CNR-ILC), Enrico Pasini (Università di Torino), Giulia Pedonese (CNR-ILC), Paola Peratello (Università Ca' Foscari Venezia), Andrea Pergola (Università degli Studi di Cagliari), Ginevra Peruginelli (CNR-IGSG) University of Groningen, Federico Pianzola (University of Groningen), Fabio C. Pinna (Università degli Studi di Cagliari), Igor Pizzirusso (AIPH), Tiziana Pontillo (Università degli Studi di Cagliari), Valeria Quochi (CNR-ILC), Lisa Reggiani (CNR-ILIESI), Giulia Renda (Alma Mater Studiorum Università di Bologna), Pietro Restaneo (CNR-ILIESI), Dario Rodighiero (University of Groningen), Roberto Rosselli Del Turco (Università di Torino), Federica Rovelli (Università di Pavia), Giampaolo Salice (Università degli Studi di Cagliari), Enrica Salvatori (Università di Pisa), Emilio M. Sanfilippo (CNR-ISTC), Eva Sassolini (CNR-ILC), Manfredi Scanagatta (UniMore), Andrea Schimmenti (Alma Mater Studiorum Università di Bologna), Flavia Sciolette (CNR-ILC), Alessia Scognamiglio (CNR-ISPF), Luigi Serra (CNR-ISEM), Pietro Sichera (CNR-ILIESI), Daria Spampinato (CNR-ISTC), Giulia Speranza (Università di Napoli "L'Orientale"), Rachele Sprugnoli (Università di Parma), Francesco V. Stella (Università di Siena), Timothy Tambassi (Università Ca' Foscari di Venezia), Mirko Tavosanis (Università di Pisa), Francesca Tomasi (Alma Mater Studiorum Università di Bologna), Simona Turbanti (Università di Milano), Nicoletta Usai (Università degli Studi di Cagliari), Marco Venuti (Università di Catania), Gennaro Vessio (Università di Bari "Aldo Moro", Gabriele Vezzani (Università di Verona), Simone Zenzaro (CNR-ILC).

Enti organizzatori / Organisers

Il XV convegno annuale dell'Associazione per l'Informatica Umanistica e la Cultura Digitale (AIUCD) è organizzata dal DH UNICA - Centro Interdipartimentale per l'Umanistica Digitale e dal Dipartimento di Lettere, Lingue e Beni Culturali dell'Università di Cagliari in collaborazione con AIUCD.

Sommario

PREMESSA I-IV

Cristina Marras, Andrea Pergola, Giampaolo Salice

[1/A] INTELLIGENZA ARTIFICIALE GENERATIVA E RIFLESSIONE TEORICA

Una Agenda sull'AI generativa per Digital Humanities 6

Fabio Ciotti

L'errore dell'IA come euristica per una deliberazione assistita 14

Valerio De Luce; Tiberio Uricchio

Verso una memoria artificiale? Il progetto Johannes tra questioni tecnologiche, archeologiche e morali 21

Stefano Bertoldi

AI confini della realtà: il pensiero umano nell'epoca della sua riproducibilità generativa 31

Daniele Silvi

[1/B] CORPORA DIGITALI: REQUISITI E SOLUZIONI GESTIONALI

Verba volant, emails manent: una proposta di metodologia per l'acquisizione e la preservazione degli archivi di posta elettronica di personaggi illustri 38

Alberto Abis, Stefano Allegrezza, Fabrizio Stupino

Sfide alla sostenibilità dei progetti di digitalizzazione: i casi studio degli archivi manicomiali calabresi 45

Emanuela Nicole Donato, Maria Natalia Federico, Grazia Serratore

A technical solution for a digital cultural heritage corpus: Notes on collaboration, requirements and sustainability 53

Arianna Ciula, Miguel Vieira, Geoffroy Noel, Neil Jakeman, Zihao Lu, Tiffany Ong, Simona Stoyanova, Jonathan Prag, Alessia Coccato, Ryan Heuser

[1/C] CO-PRODUZIONE DI ARCHIVI E COLLEZIONI DI COMUNITÀ

L'Archivio Digitale di Vigne Nuove. Costruire un archivio di comunità, tra teoria e pratica 62

Manfredi Scanagatta

Participatory Digital Archives as a Method for Co-constructing Cultural Memory: The Bunjevke Women's Platform 68

Sandra Iršević PhD

Il ritorno dei partigiani sardi. Una collezione digitale co-prodotta 73

Walter Falgio, Laura Stochino, Matteo Quarantiello

Dalla materialità delle fonti al dato condiviso: metodi ibridi per un archivio digitale partecipativo 78

Tiziana Pasciuto

[2/A] LARGE LANGUAGE MODELS: APPLICAZIONI UMANISTICHE

Scholarly Opinion Mining using LLMs and Knowledge Graphs: the case of the Van den vos Reynaerde 87
Andrea Schimmenti, Joris van Zundert, Fabio Vitali, Marieke van Erp

Un LLM per le Scienze Umane e Sociali? ReSearch_SSH come esperimento europeo 95
Adam Faci, Alessio Miaschi, Anne Combe, Pascal Cuxac[4], Francesca Frontini, Nicolas Larrousse, Stéphane Pouyllau

L'AI a servizio della Musicologia: costruzione di thesauri musicologici con il supporto dei Large Language Models 102
Manuela Grillo, Paolo Bonora

Per una formazione del filologo computazionale del futuro: Domain Specific Language e Large Language Model 107
Christian D'Agata, Angelo Mario Del Grosso, Federico Boschetti

[2/B] OPEN SCIENCE, SOSTENIBILITÀ E PRATICHE APERTE

Are Digital Humanities really committed to open? An exploratory study on the availability of methodological workflows and open peer review practices 116
Silvio Peroni

Monitorare la transizione: l'Osservatorio sulle pratiche di Open Science nelle SSH come strumento di Public Engagement 122
Pamela Barletta, Marta Caradonna, Nicola Giampietro, Alice Orrù, Federico Silvestri

Nel 25° anniversario di Wikipedia: l'ecosistema Wikimedia e le Digital Humanities tra pratiche collaborative e sostenibilità della conoscenza 130
Piergiovanna Grossi

Una pausa e tre domande. La crisi della memoria nell'era dell'accesso 137
Enrica Salvatori, Federico Valacchi

[2/C] MODELLI DIGITALI PER GESTIRE E CONDIVIDERE FONTI MULTIDISCIPLINARI

Digital Repatriation in Practice: Sharing Ethnographic Photography with Communities of Origin at the Náprstek Museum 142
Daniela Šnapková

Una storia da ascoltare. Descrivere, mappare, connettere: un modello per la valorizzazione degli archivi musicali 147
Martina Gremignai, Luca Andrea Ludovico

LETSdigit: Archivio digitale della letteratura a Trieste 154
Alina Jill Simeone, Cristina Fenu, Marina Buzzoni, Roberto Rosselli Del Turco

La mostra *Coerenza In Coerenza* (1984) oltre la fotogrammetria: ricostruzione digitale tramite reti neurali 161
Filippo Yahia Masri, Maria Carmeliti

[3/A] AI E NLP PER TESTI E RECUPERO DELL'INFORMAZIONE

Creating a new gender-fair Italian morphological classifier based on UmBERTo fine-tuning 168
Irene Caiazzo, Giovanna Maria Dimitri

Assessing LLM Capabilities in Cultural Heritage: Recent Trends and Gaps in Benchmarks 175

Remo Grillo , Gianmarco Spinaci, Lukas Klic, Giovanni Colavizza

L'intelligenza artificiale per il potenziamento dell'information retrieval nei discovery tool delle biblioteche 183
Ilaria Belvedere, Simona Turbanti

Sinergie ludonarrative: l'evoluzione del racconto videoludico tra divulgazione, tecnica ed intelligenza artificiale 191
Giulia Angelini, Tommaso Mazzoli

[3/B] DH PER STORIA, DIRITTO E ARTE

Archivi ibridi di persona e preservazione forense dei materiali nativi digitali 198
Mariangela Giglio, Adele Gorini

Digital Humanities e studi neogreci: il progetto della Biblioteca Digitale dell'Osservatorio "Mario Vitti" 204
Georgios Katsantonis

artresearch.net: A Research Infrastructure for Exploring Interpretive Plurality in Art-Historical Photo Archives 211
Marilena Daquino, Francesca Mambelli, Alessandro Adamou, Pietro Maria Liuzzo, Stefanie Schneider, Spyros Koulouris, Artem Kozlov, Rafael Brundo Uriarte

Legislative Changes Concerning the Reproduction of Images of Italian Cultural Heritage Assets between 2023 and 2025 217
Marco Ciurcina, Piergiovanna Grossi

[3/C] ANALISI COMPUTAZIONALE DEL TESTO LETTERARIO

Flaiano postcoloniale? Un approccio computazionale alla *vexata quaestio* di *Tempo di uccidere* 226
Silvia Lilli, Daniel Raffini

Verso una rappresentazione del macrotesto: filologia d'autore e analisi quantitativa nei racconti di Fausta Cialente 234
Emmanuela Carbè

Analisi fluidodinamica dei campi semantici in testi letterari: il Numero di Reynolds come modello di turbolenza testuale 241
Pietro Sichera, Carla Perrone, Antonio Sichera

Dentro l'Officina del Testo: Modellare Strutture Letterarie Complesse 248
Enrica Bruno

[4/A] STUDI LETTERARI DIGITALI E DISTANT READING

Tracing Intertextuality at Scale. A Network Study of Poetic Influence 255
Gabriele Vezzani

The Landscape of Italianistica: Italian Literary Studies and Digital Humanities in Semantic Space 261
Maria Levchenko

L'Edicola della Storia di Trieste: NLP e *distant reading* Per il confronto tra periodici storici italiani e sloveni nella Trieste del 1902 267
Cristina Fenu, Giovanni Pinna

Literary Tropes as Prescriptive Devices: A Case Study from BookTok 274

Silvia Cappa, Mariangela Giglio, and Anna Sofia Lippolis

[4/B] MUSEI E ACCESSO DIGITALE

Rigenerare un patrimonio desueto con il phygital: la Casa Museo Bartolo Longo 282
Mauro De Bari

Musei senza confini: il digitale come infrastruttura di memoria partecipata nei musei delle aree interne. Il GeoMuseo Monte Arci Stefano Incani di Masullas e il Museo Paleontologico PARC di Genoni 290
Paola Palmas

Pubblici remoti: la Realtà Virtuale come infrastruttura culturale di accesso 296
Elisa Smeraldo

[4/C] FORMAZIONE, DIDATTICA E LABORATORI DH

Gli Hunger Games del LabCD. Un diario di sopravvivenza 304
Enrica Salvatori, Vittore Casarosa, Francesco Ricciardi

It's Buildin' Time: A Project-based Approach for Teaching Data Management to Cultural Heritage Graduate Students 309
Sebastian Barzaghi, Alba d'Elia, Esther Montserrat Giordano, Giulia Guidarelli, Gianluca Petrosillo, Elisabetta Sabattini, Fiammetta Sabba, Lucia Sardo

Integrazione di tecnologie per la traduzione e CLIL nella creazione di risorse didattiche per il sardo 319
Gianfranco Fronteddu, Igor Deiana

[5/A] LINKED OPEN DATA, MODELLI SEMANTICI, INFRASTRUTTURE

Reti sociali e linked data: persone e co-occorrenze documentarie nel Portale delle fonti per la storia della Repubblica italiana 329
Herbert Natta, Gianluca Rossi, Roberta Maggi

Web Portals on Linked Open Data: Testing Sampo-UI in Projects on Early Modern Bibliographic Data and Chinese Calligraphy and Arts 336
Arianna Moretti, Katarina Lučić, Iiro Lassi Ilmari Tiihonen, Jonas Paul Fischer

Risorse Terminologiche e Linked Open Data: il *Glossario delle Infrastrutture di Ricerca* (GIR) come Caso di Studio 345
Lucia Francalanci, Alessia Scognamiglio, Giulia Pedonese, Michele Mallia, Irene Falini, Fahad Khan

Orchestrazione di servizi e scenari avanzati: fruizione e necessità delle comunità di ricerca nel marketplace di H2IOSC 352
Pietro Sichera, Cristina Marras, Enrico Pasini, Vittoria Fabiani, Paolo Ongaro, Michele Scapicchi, Chiara Di Pietro

[5/B] PATRIMONIO CULTURALE: SISTEMI INFORMATIVI INTEGRATI

Architettura e *Digital Humanities*. Conoscenza e valorizzazione del Patrimonio attraverso la costruzione di sistemi informativi integrati 361
Donatella Rita Fiorino, Caterina Giannattasio, Elisa Pilia, Valentina Pintus ,Andrea Pirinu, Marcello Schirru

Tra testo e architettura digitali per lo studio delle trasformazioni storico-artistiche dei monasteri benedettini 368

Gianmario Guidarelli, Paolo Borin, Sonia Cavicchioli, Chantal Pivetta, Renato Canearo,

Dalla pergamena al virtuale. Manoscritti miniati nello spazio tridimensionale 375
Valeria Minisini, Bruno Fanini, Giorgio Gosti

Modeling and visualizing palimpsests with IIIF Presentation API 3.0 382
Panagiotis Leontaridis, Giacomo Marchioro, Glen Robson

[5/C] CROWDSOURCING E PUBLIC ENGAGEMENT

Tag ANIMALx: Crowdsourcing the Non-Human in Cultural Heritage Collections 389
Daniela Teixeira Gomes, Carla Vieira, Joana Vieira Paulino

From perception to memory: Public Engagement and Neurohumanistic Approaches to the Collective Reconstruction of Archaeological Heritage 396
Grazia Solenne, Vincenza Ferrara, Elisa Corrò

Comunicare la ricerca archeologica nell'ecosistema digitale: pratiche, metodi e sperimentazioni su Instagram 404
Marco Demuru

Public engagement nell'era dei synthetic media: per una co-interpretazione critica tra Digital Humanities e Media Education 411
Gabriele Prosperi, Mario A. Bochicchio

[6/A] MODELLAZIONE TESTUALE E LINGUISTICA COMPUTAZIONALE

Verso un dizionario narrativo computazionale degli usi linguistici in aree ad alta vulnerabilità sociale 420
Michela Bandini, Silvia Piccini, Andrea Bellandi, Emiliano Giovannetti

Verso la creazione di una Treebank per il sardo 426
Nicoletta Puddu, Manuela Sanguinetti, Luigi Talamo

A Learning-by-Doing Approach to Spoken Data Collection: The Case of the LPSP Corpus 432
Claudia Roberta Combei, Gaia Eleonora Di Raimondo, Sofia Maestri, Benedetta Romanazzi, Elena Scotti

Digital Humanities e Letteratura Elettronica in Italia: marginalità e convergenze 440
Giuseppe Arena

[6/B] CO-CREAZIONE, RICERCA PARTECIPATIVA, COMUNITÀ

Metodi e strumenti di sperimentazione tra co-creazione, Digital Humanities, e ricerca demo-etno-antropologica: la digitalizzazione come pratica relazionale ed etica. 448
Eleonora De Longis, Matteo Cova, Giovanni Bertelli

Integrare strumenti digitali e conoscenze della comunità per una progettazione urbana resiliente al clima: l'iniziativa Dundrum by Design 455
Chiara Cocco, Mattia Leone, Antonio Savino, Miruna Popa, Sara Tedesco

HCI e AI per il Public Engagement: casi di studio per la valorizzazione del patrimonio culturale 462
Samuel Aldo Iacolina, Manuela Angioni, Valentina Marotto, Francesca Mura, Piergiorgio Palla

The Automation of Research in Digital Humanities: Artificial Researchers, Digital Archives, and the Democratization of Scholarly Access 468
Roberto Di Quirico

[6/C] AI E AUTOMAZIONE PER ARCHIVI E PATRIMONIO

Dal problema storico alle IA: Il Database on the Slave Trade between the Mediterranean and the Atlantic (15th-16th Centuries) 477
Salvatore Spina, Carlo Taviani, Jörg Hörnschemeyer

Peirce Interprets Peirce: Digitization, Automation, and Interpretation in Charles Peirce's Manuscripts 485
Alessandro Adamou, Sebastian Feil, Davide Picca, Carlo Teo Pedretti, Dario Rodighiero,
Lorenzo Zangari

A New Semantic Model for Mythologiae: from Data to Interpretation 494
Bianca La Manna

[7/A] ONTOLOGIE, FAIR DATA E MODELLAZIONE DELLA CONOSCENZA

The ATLAS Guidelines for producing FAIR research products in the Digital Humanities 502
Chiara Martignano, Giorgia Rubin, Sebastiano Giacomini, Alessia Bardi, Marina Buzzoni, Marilena Daquino, Riccardo Del Gratta, Angelo Mario Del Grosso, Franz Fischer, Roberto Rosselli Del Turco, Francesca Tomasi

RATIO: strumenti per la creazione e la gestione di risorse e collezioni FAIR nell'ambito delle scienze umane 509
Federico Silverstri, Lorenzo Mancini, Laura Baggiani, Marco Bagiacchi

Making Uncertainty Explicit: The Preservation of Interpretive Complexity across Digital Humanities Project Workflows 516
Tommaso Battisti, Valentina Pasqual, Giulia Renda, Marilena Daquino

Iconclass as a Semantic Framework for the Analysis of the Sacred Space 524
Polina Voronova, Alessandro Adamou

[7/B] GIS E SPAZIALIZZAZIONI DIGITALI

Gli *Historical GIS* e la storia forestale: potenzialità e applicazioni 531
Vincenzo Colaprice

Le nazioni genovesi nell'Atlante digitale di Storia Marittima del Regno di Sardegna (ASMSA). Lavori in corso 539
Giampaolo Salice, Giommaria Carboni

Integrating Romanian Toponymy in a GIS Background: dictionary forest names vs. OpenStreetMap forest data 547
Roxana Patras, Ana Odochiciuc, Mihai-Bogdan Atanasiu, Constantin Răchită

Digital Humanities per narrare i territori: un WebGIS sui porti minori della Sardegna dal medioevo alla contemporaneità. Una proposta di implementazione collaborativa 554
Luigi Serra, Sebastiana Nocco

[7/C] MODELLI, METODI E PROSPETTIVE DELL'EDIZIONE DIGITALE

Roman and Justinianic Legal Terminology in Thirteenth-Century Western European Diplomatic Sources 562

Tamás Kovács, Anguelos Nicolaou, Johannes Laroche, Georg Vogeler

In Search of Lost Time: an Innovative Model for Representing Autograph Texts 567
Giulia Baldelli, Daniele Fusi, Matteo Zupancic, Franz Fischer, Claus Zittel

Naples Dante Project. Un ambiente integrato per l'analisi bibliografica, filologica e iconografica 573
Gennaro Ferrante, Andrea La Veglia, Daniele Fusi, Stefano Angelo Rizzo, Angelo Eugenio Mecca, Daniele Duranti, Anna Sviridova

La curatela biblioteconomica delle raccolte digitali MAB: linee gestionali, requisiti, workflow 580
Nicola Barbuti

[8/A] GRAFI, LINKED DATA E MAPPING

DOG: an open-source ecosystem for mapping, narrating, and exploring humanities data 588
Alessandro Laruffa, Alessandro Capra

Beyond Spatial Data: Exploring Gender and Property in the Catasto Generale Toscano through the Florentia Illustrata Semantic Platform 596
Erica Andreose , Remo Grillo , Gianmarco Spinaci

Per la storia del mercato dell'arte tra otto e novecento: raccolta, modellazione e valorizzazione dei dati sugli antiquari italiani 602
Valentina Rossetti, Marilena Daquino, Francesca Mambelli, Ludovica Pannitto, Francesca Tomasi

Un grafo per la ricerca storico-filologica in archivio: il caso del fondo Giuseppe Albini 609
Lucia Giagnolini, Mohamed Iheb Ouerghi, Valentina Pasqual, Cecilia Tamagnini, Francesca Tomasi

[8/B] GEOGRAFIE LETTERARIE E MULTIMEDIALI

'Spazializzare' la narrativa ecocritica italiana: la piattaforma dell'Atlante digitale della letteratura ecologica italiana 617
Valentina Pasqual

MeMo: mappe digitali, memoria letteraria e public engagement nel Mezzogiorno 624
Laura Giurdanella; Giuseppe Palazzolo

Una proposta di approccio computazionale alle geografie del cinema italiano 631
Alberto Savi, Luca Giovannini

Il campo semantico del fuoco nella Commedia: un caso di studio sulla pertinenza lessicale e sulla visualizzazione 638
Ruoci Song

[8/C] ANNOTAZIONI E MARKUP

Ritagli di teatro. Annotazione semantica della rassegna stampa del Teatro Sant'Erasmo 644
Paolo Bonora

Annotazione semantica delle formule poetiche del Medioevo germanico 651
Roberto Rosselli Del Turco, Letizia Vezzosi

Ça y est : Annotating Arabic Texts for Teaching 658

Dal markup all'interpretazione: interrogare il linguaggio della critica verista in un corpus XML/TEI 665
Denise Bruno, Salvatore Cristofaro, Antonio Di Silvestro, Laura Mazzagufo, Daria Spampinato, Giuseppe Zappalà

[9] SESSIONE POSTER

Archivi letterari nativi digitali: modelli descrittivi ed edizioni sperimentali 673
Elena Barchielli, Simon Willemin, Elena Spadini.

Lexicon Philosophicum: una rivista digitale per la condivisione della conoscenza umanistica 679
Pamela Barletta, Maria Cristina Dalfino, Pietro Restaneo

Intelligenza artificiale, reference digitale e accessibilità: l'esperienza di Alphabetica 684
Flavia Bruni – Elisabetta Castro

Grafoteca e la costruzione digitale della memoria manoscritta: curatela, metadatazione e reti di risorse 691
Amalia Carrano

Valorizzazione digitale del patrimonio culturale: Public-Private Partnership e partecipazione sociale 697
Annalisa Ciliberti

I Vangeli digitali e accessibili, per un'editoria religiosa universale e senza barriere 703
Giulia D'Arcangelo

Implementing a controlled vocabulary for medieval administrative acts: theoretical and methodological considerations 709
Chiara De Bastiani

L'Archivio del Centro Conservazione e Restauro "La Venaria Reale": un caso studio per la diffusione dei dati tecnico-scientifici 717
Stefania De Blasi, Lorena Palmieri, Chiara Pipino

Strumenti digitali per i percorsi di visita della Palazzina di Caccia di Stupinigi: Residenza Sabauda e Museo dell'Ammobiliamento 722
Stefania De Blasi

Strategie di protezione, governance e sostenibilità degli archivi orali 727
Rosaria De luca, Elvira Mercatanti, Monica Monachini

FAIR Memories: A Workflow for the Preservation and Collaborative Reuse of Analog Oral History Collections 734
Nike del Quercio, Costanza Paolillo, Laurent Fintoni

Ontologycore: A Formal Knowledge Graph of Internet Aesthetics 740
Anouk Flinkert, Ekaterina Krasnova, Shiho Nakamura

Il ruolo del Test Plan per la validazione: il caso d'uso del Marketplace H2IOSC 747
Vittoria Fabiani

Partecipazione, mediazione e conoscenza: Àndalas de Cultura quale ecosistema digitale del patrimonio culturale della Sardegna 754
Carolina Floris

From Violin Lessons to Linked Open Data. Reconstructing Tartini's *Scuola delle Nazioni* through Digital Prosopography and Digital Editions 762
Selina Galka, Marcella Tambuscio, Rolf Wissmann, Cristina Scuderi, Georg Vogeler

Addestramento di un modello di HTR in Transkribus per testi plurilingui di età moderna: il caso del *Ripulimento della lingua sarda* (Madau) 768
Michela Incollu, Giulia Murgia

Modelli digitali interattivi per gli archivi teatrali storici: mappare le relazioni semantiche al Teatro Metastasio di Prato (1827–1860) 775
Matilde Innocenti

Tra fotografia e segno: la trascrizione informatizzata dei registri storici Alinari 779
Pamela Krzemien

Biblioteche filosofiche private e memoria culturale: http://picus.unica.it/ 786
Andrea Lamberti, Giovanna Granata

Beyond Archives: A Three-Stage Workflow for Relational Digital Libraries of Written and Oral Memory Sources 791
Giulia Lembo

A Workflow-Centred Approach to Managing Semantic Artifacts as Linked Open Data 800
Michele Mallia, Fahad Khan, Valeria Quochi

SEBASTIAN: uno strumento per l'organizzazione, l'analisi spaziale e la visualizzazione dei dati storici 807
Christian Marcantonio, Giuseppe Consolo

Raccontando e valorizzando il patrimonio culturale. Dalle prime esperienze ai progetti futuri del CNR-ISEM 814
Maria Grazia Mele R., Samuel Aldo Iacolina, Luigi Serra, Giovanni Serreli

La Digital Library e l'Ecosistema digitale per la cultura come opportunità di *public engagement* 821
Federico Meschini, Biancamaria Hermanin, Antonella Negri, Giuliano Romalli

Strategie di engagement nella creazione e sostenibilità di un parco letterario: i risultati del progetto CHANGES 827
Sara Obbiso, Nicola Mariniello, Davide Bagnaresi, Riccardo Stracuzzi, Giuliana Benvenuti, Alessandro Iannucci

Lo studio integrato del patrimonio materiale e immateriale per la ricostruzione delle pratiche storiche di gestione delle risorse ambientali nell'Alpujarra (Sierra Nevada): il progetto Sinergy 835
Alessandro Panetta

Reveduti, Correcti, Aprobati et Confirmati: The Digital Edition of the Statutes of Ascoli 841
Michela Parma, Fabio Mariani

Trascrivere automaticamente i registri catastali sardi del primo Novecento con Transkribus: risultati di un caso di studio 849
Andrea Pergola, Cecilia Tasca

Ricostruzione virtuale di un patrimonio disperso: le collezioni di disegni a Genova nel XIX secolo 856
Giulia Pilosu

Dai workflow descrittivi ai workflow applicativi tramite AEON e l'IA 860
Francesco Pinna, Emiliano Degl'Innocenti

Gamification per la valorizzazione dei beni musicali. Un'ipotesi di raccolta di dati catalografici in *crowdsourcing* 867

Marcello Ranieri

Tra riconoscimento disciplinare e prospettiva pubblica: un modello logico-applicativo per le conoscenze e le competenze nelle DH 874

Lisa Reggiani

Mappe, scale e interpretazione. Per una cartografia digitale semantica dello spazio narrativo 883

Lorenzo Sabatino

Verso un grande corpus diacronico dell'italiano: il contributo degli esempi del GDLI 893

Eva Sassolini, Sebastiana Cucurullo, Marco Biffi e Simonetta Montemagni

Verso una classificazione funzionale dei prompt basata sulle intenzioni cognitive esplicitate dagli studenti nell'interazione con l'IA 901

Daniele Scala, Salvatore Varriale

Il videogioco come strumento di mediazione interculturale 909

Alessia Stocco

Edizione digitale commentata di *Le libere donne di Magliano* di Mario Tobino: primi passi, metodi e prospettive 917

Fabio Zarroli

Il restauro testuale dei papiri nel progetto GreekSchools: CoPhiEditor e l'integrazione di modelli linguistici 923

Simone Zenzaro, Federico Boschetti, Angelo Mario Del Grosso, Graziano Ranocchia

MAGIC-MEMO: pratiche condivise di digitalizzazione per la memoria scritta di Montecassino 931

Elvira Zambardi, Ylenia Nardone, Giuseppina Civitillo

In Search of Lost Time: an Innovative Model for Representing Autograph Texts

GIULIA BALDELLI[1], DANIELE FUSI[2], MATTEO ZUPANCIC[3], FRANZ FISCHER[4], CLAUS ZITTEL[5]

[1]STUTTGART UNIVERSITY, GERMANY – GIULIA.BALDELLI@ILW.UNI-STUTTGART.DE
[2]STUTTGART UNIVERSITY, GERMANY – DANIELE.FUSI@TS.UNI-STUTTGART.DE
[3]UNIVERSITÀ DI PISA, ITALY – MATTEO.ZUPANCIC@UNIPI.IT
[4]UNIVERSITÀ CA' FOSCARI VENEZIA, ITALY, FRANZ.FISCHER@UNIVE.IT
[5]UNIVERSITÀ CA' FOSCARI VENEZIA, ITALY, CLAUS.ZITTEL@UNIVE.IT

ABSTRACT (ENGLISH)

This paper introduces the ongoing evolution of a novel digital model for representing and visualizing autograph texts in the context of genetic philology. Departing from traditional approaches that focus on comparing static versions extracted from an autograph sheet, this model shifts the focus from the effects (the texts) to the cause (the creative process itself). By leveraging a process-oriented, time-aware data structure, the model captures the dynamic flow of text creation and alteration, offering a more faithful and scalable representation of complex, annotated documents for scenarios like Goethe's *Venetian Epigrams*.
Keywords: digital scholarly editing; genetic editions; modelling; Goethe Venetian Epigrams.

ABSTRACT (ITALIANO)

Questo articolo presenta l'evoluzione di un nuovo modello digitale per la rappresentazione e la visualizzazione di testi autografi nel contesto della filologia genetica. Partendo dagli approcci tradizionali che si concentrano sul confronto di versioni statiche estratte da un documento autografo, il modello sposta l'attenzione dagli effetti (i testi) alla causa (il processo creativo stesso). Sfruttando una struttura dati orientata al processo e sensibile al tempo, il modello cattura il flusso dinamico della creazione e dell'alterazione del testo, offrendo una rappresentazione più fedele e scalabile di documenti complessi e annotati per scenari come gli Epigrammi Veneziani di Goethe.
Parole chiave: edizione scientifica digitale; filologia genetica; modellazione; Epigrammi veneziani di Goethe.

1. A CRITICAL DIGITAL EDITION OF GOETHE'S *VENETIAN EPIGRAMS*

In the spring of 1790, Johann Wolfgang von Goethe returned to Italy for the second time, arriving in the lagoon city of Venice. He lodged in a room overlooking the Canal Grande at the inn *All'insegna della Tromba*, where he was registered under the name Baron "Giovanni Gaeta" (also recorded as "Gassetta" or "Gajeta") from Saxony.[1] Going by this Italianized identity, Goethe spent nearly two months – from 31 March to 22 May – wandering the city's narrow streets, visiting its many artistic landmarks, observing its resonant and licentious urban life, and pursuing his emerging ambition to develop a morphology of animals. At the intersection of these impulses, and aided by the boredom induced by persistent rains that soaked the Venetian landscape, he began to jot down a series of brief poetic sketches. These would quickly grow into hundreds of compositions arranged in a series of handwritten notebooks which, chaotically yet progressively, took shape as the *Venetian Epigrams* (VE), conceived as a companion piece to the more famous *Roman Elegies*.

As Claus Zittel has observed in his 2023 article, the philological point of departure for the VE is remarkably unstable.[2] Despite an extensive and largely well-preserved manuscript tradition, the epigrams have not yet been edited in accordance with modern scholarly standards. This situation is primarily due to their complex history of composition and transmission, which is characterized by repeated interruptions and gaps in manuscript preservation. Further complicating matters is a dense interplay of self-censorship and external censorship, coupled with the fundamental impossibility of establishing a single authoritative version of the VE. The large number of textual witnesses, the fluctuating number of epigrams contained in each, and the abundance of variant readings render the reconstruction of their

[1] Oswald (2014), pp. 31-39.
[2] Zittel (2023), pp. 169.

genesis and transmission highly problematic. Ongoing processes of numbering and renumbering across manuscripts not only impede the systematic comparison of variants, but also generate unstable sequences that are difficult to reproduce adequately in print.
The manuscripts moreover exhibit multiple layers of revision: corrections, deletions, additions, marginal annotations, and alternative readings were introduced by several unknown hands at different times, using various writing instruments and inks. These interventions – ranging from punctuation changes and shifts in word order to parallel variants and distinct drafting stages – are often visible in the material record but cannot always be arranged into a clear chronological sequence.
The VE can therefore be understood not as a fixed text, but as a *textum mobile*. No single manuscript or print defines the work; rather, its textual identity emerges from the totality of its variants. The epigrams continuously reconfigure themselves across differing contexts and constellations. Their aesthetic identity is constituted precisely through variation, recombination, and contextual displacement, resulting in multiple, coexisting forms of textual identity. These identities are not the product of organic development, but of a combinatorial – and at times even aleatory – process. This necessitates a dynamic concept of the text and, concomitantly, a revision of the traditional notion of the "work," which the protean and fluid nature of the VE fundamentally resists.
Against this backdrop, the project develops a digital scholarly edition capable of representing the VE not merely as a sequence of textual states, but as a network of textual movements, both diachronic and synchronic. The platform will make visible, for each epigram, its transformations across different stages, the pretexts on which it draws, and the new contexts it enters. The primary aim is to model the *textum mobile* in its full complexity and thereby to render the entire corpus more accessible for philological research. Methodologically, the digital edition will trace the movements and transformations of individual epigrams across their various configurations while simultaneously situating them within each respective arrangement. It will virtually reconstruct Goethe's proposed organizational schemes at different stages and document, as far as possible, processes of revision. In addition, the edition will enable the formation of thematic groupings, the identification of recurring motifs, and the analysis of metrical patterns and correspondences.
In this way, the VEdition will provide readers, for the first time, with a platform to uncover the rich compositional history of a work that, despite its central position within Goethe's corpus, has been deeply shaped both by the vividness of its content and by its markedly open-ended nature. Additionally, it will serve as a means of exploring new ways of conceiving the editorial presentation of a complex and multi-layered textual development, by preserving the meaningful autonomy of each individual text carrier and each specific textual version, without subsuming them under the hierarchy of a presumed "final version" that cannot, in fact, be established. The fluid, almost metamorphic quality of the interplay between the base layer and its array of alterations can also be visually observed through animations, thereby introducing a new and heuristically powerful tool for both hermeneutic inquiry and didactic practice.

2. DIGITAL MODEL

The representation of autograph texts — original manuscripts with complex layers of annotations representing variants of its text — poses significant challenges for digital philology. In many traditional digital approaches, the autograph document (here named carrier) serves as the material evidence from which multiple virtual versions are derived. These versions are of course abstractions, defined by interpreting the carrier's content. Markup languages such as TEI are then used to connect them, marking deletions and additions relative to other versions — a process akin to "diffing" texts. This allows us to leverage existing critical edition practices to extract and compare multiple static versions from a document, using markup to annotate differences. We can then present text versions side to side, emphasizing their differences, and thus implicitly pointing at the creative process behind them. This is fit to methods and tools based on traditional text criticism, essentially based on comparing witnesses to build a reconstructed text, like comparing versions to hint at the transformation process which produced them.
While effective for many scenarios, this method might be less convenient with the high complexity and conceptual demands of deeply annotated documents like those of *Venetian Epigrams*, where literally dozens of alternative texts may coexist at the same level, reflecting an ongoing creative process rather than a finalized work. A systematic comparison and the consequent markup, connecting a big number of different versions where no one can claim to be the final one, would be rather difficult to scale. Moreover, the traditional approach still focuses on the *effects* of the underlying creative *process*, requiring the au-

dience to mentally reconstruct it from the differences surfaced on texts. The focus is on aligning versions and detailing differences to elucidate the process that generated them. Yet, the carrier with all its chaotic annotations is the witness of a creative process in the author's mind which progressively unfolded over time[3]; all the variants we derive and align are just its effects. The dynamic nature of this process is intrinsically difficult to fit into the presentation of multiple static texts.

In a digital edition, however, we can try to exploit time as our ally, instead of our enemy. The same time which accumulated all those changes on a text, making it a puzzle for scholarly interpretation, can be the solution to a more effective presentation of the creative process, reproducing a hypothesis about its reconstruction, unwinding versions one after another via animations.

So, the proposed model advocates a dramatic shift in focus: from the *texts* extracted from the carrier to the *process* that generated them. The carrier is seen not merely as a repository of texts, but as a witness to the creative process, with annotations serving as traces of the author's evolving intentions. A process being essentially a sequence of actions in time, a text making process is just represented as a sequence of editing operations (deleting, adding, replacing, moving, swapping) applied over time. Each operation produces a new version, and the accumulation of these operations constitutes the creative flow.

This implies that at this higher granularity level not all the outputs can be regarded as a self-contained text; they are rather steps along a transformation path. Only certain versions — those corresponding to significant alteration stages — are treated as waypoints along this path. This allows for the representation of multiple texts even in the absence of a final stage, with all stages coexisting as equally valid alternatives; and thus, it fits a scenario where a "constellation" of texts coexist on the same plane. There, the various text stages are like stars derived from the same nebula (the creative process), with the carrier acting as a telescope that captures the light (annotations) from the past, like in a photographic snapshot, thus allowing scholars to formulate a reconstructive hypothesis.

This shift from text outputs to the process generating them and reflected on the carrier requires us to define a new model, capable of composing many tensions: single vs. multiple documents (the carrier is materially one, but it virtually represents multiple versions of the text); objective vs. subjective layers (the carrier is the material evidence, while the reconstruction is subjective); and textual vs. graphical representations (as diplomatic data here is a foundational part of the reconstruction).

In this context, composing the first tension (single vs. multiple documents) was accomplished using a single data structure, termed "chain", capable of representing any number of text versions. The base text is modeled as a set of character nodes in a directed graph, linked one after another to build sequences. So, the chain includes a set of nodes, and a set of links, each tagged with the version it belongs to. With reference to the chain, editing operations just add new links (and possibly nodes, in case of insertions or replacements, which imply new characters), thus creating new versions without duplicating the entire text, while constantly increasing the items in those sets. For example, deleting a word involves creating a bypass link that skips the deleted portion, while adding or replacing text introduces new nodes and links. This approach ensures that all versions are efficiently represented within a single, compact structure defined via operations, which in turn are the essence of our process (Figure 1[4]).

[3] When speaking of time, we are not implying a historical interpretation which orders one operation after another as it were going to reflect the real sequence of events occurred in the text making process. There is a tendency towards a historically plausible reconstruction, but the order within each alteration stage is just conventional. Time here is the focus of the model in the sense of being an additional feature of it, where information *accumulates* both on the graphical and on the textual layer. Every editing operation adds information for the next state of the text; so, in a sense, earlier states are those with fewer information, and later states are those with more. This has some resemblance with information theory applied to time in physics viewed as the 'cumulative record' of what happened.

[4] Figure 1 shows 3 versions of a text: v0 "A red pen", v1 "A pen" (delete "red_"), v2 "A pencil" (insert "cil"). From left to right, just follow the version tag to compose the corresponding sequence of characters. Characters are nodes, linked by edges tagged with the corresponding version. Every version adds new edges, and possibly new nodes, to the chain, while nothing ever gets removed from the set. This accumulates more and more data as 'time' goes by, while preserving a compact model and representing each character with a single entity; just like on a manuscript the character once written stays there forever, and may become part of different sequences via annotations.

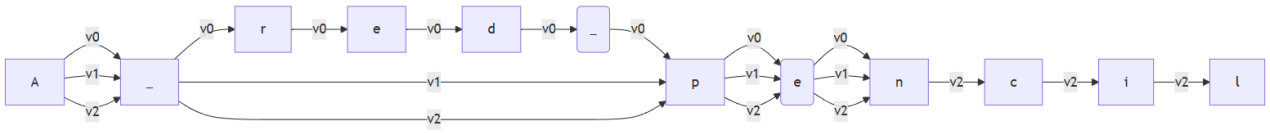

Figure 1. A chain sample

The same model also supports the annotation of both text and process through metadata linked to operations. So-called "features" — essentially name/value pairs[5] — can be attached to nodes or output versions, enabling the documentation of reasons for changes (e.g., metrical adjustments, ink color, different hands) and other relevant information. So, the chain not only generates text, but also injects annotations into it.

This solves the tension between a single data structure and the multiple texts computed from it. At the same time, this architecture maintains a clear separation between the objective layer (the material carrier and its signs, which get a fully diplomatic representation) and the subjective layer (the interpreted creative process). The chain structure, fed by editing operations, generates all possible text versions and their annotations, preserving both layers for scholarly analysis.

As for the tension between textual and graphical data, the model covers both textual data (the generated texts) and graphical data (the visual appearance of signs on the carrier). Here, the original approach for graphical representation has evolved, recognizing the relevance of a more abstract and economical strategy. The original, graphical approach faithfully reproduces the facsimile image, literally re-drawing hints on top of it (via SVG), and positioning added text according to diplomatic metadata. Animations are employed to represent the temporal flow of operations. This method, while accurate, can be complex and time-consuming, unless driven by a more automated data flow for imaging.

To enhance efficiency, a new, symbolic approach has been introduced, abstracting the visualization process.[6] Instead of redrawing each sign, operations are described using rendition features (like "diagonal line", "box", "cross", "below and to the left", "shifted right", etc.), while the visualization engine uses this visual grammar to do the math to properly size and position each element.

To this end, all signs on a carrier are grouped into three categories: base text (the text laid out as first on the sheet, representing the starting point for its transformation), added text (e.g. an interlinear word replacing a word in the base text), and so-called "hints", i.e. all the other signs whose purpose is to hint at the corresponding editing operation. This classification enables distinct rendering logic for each type, facilitating accurate digital visualization. For instance, say in a line of the base text the word "Wund:" (with colon) gets a diagonal stroke on it, while a smaller word "Wunder." (with dot) is written below and to the left of it. The stroke here is the hint, representing the visual counterpart of a deletion, while the added text is the visual counterpart of an addition. Taken together, these two represent a replacement operation. In the symbolic model, this operation might have features like (from a controlled vocabulary) "hints=diagonal stroke", "position=south-west", "font-size=smaller"; the rendering engine will take care of picking the hint for diagonal stroke from a catalog of visuals, resize it to fit the word being deleted, position it over that word, and draw the added text with a smaller size at the position specified.[7] The same catalog including the drawings representing hints, like lines or shapes, also links each hint to its designed animation for entering the visualization stage. This way, a single feature attached to an operation can pick the corresponding drawing from this catalog, and reuse it wherever needed, even across different projects, implicitly getting also the enter animation for it.

[5] According to the semantic relevance of time in this model, features also include additional metadata in the dynamic flow where they get injected by operation, defining their behavior and lifetime in the process.

[6] For reasons of economy here we can only provide an overview of this model. You can find more about it together with a demo of the hint designer at https://vedph.github.io/gve-doc/model/diplomatic.html.

[7] It should also be added that side by side with those lower-level rendition features, which directly specify position, color, font size, and the like, this approach also allows for the definition of higher-level features, acting as a shortcut towards multiple lower-level counterparts. For instance, a number added to epigrams could be encoded with a single higher-level feature, like epigram-number, and later automatically translated into lower-level features like smaller number, a brown ink, rotated by about -45 degrees, at the top-left of the epigram, rather offset from it. This results in an even more abstract and thus more economic annotation strategy.

This allows for consistent, scalable rendering across projects, a more human-friendly description, and also detailed metadata about the graphical typologies used, which could later be used as search criteria or diplomatic data to feed machine learning-based computations.
Also, it should be emphasized that animation here, whatever the approach (graphical or symbolic), far from being a fancy presentational feature is crucial in the integration of time as a semantic dimension. Animations replay the sequence of editing operations, allowing users to witness the transformation of the text step by step. This dynamic visualization makes the creative process explicit, moving beyond static comparisons to reveal the flow of textual genesis.
By focusing on the process rather than static stages, the model embraces the flux of time and aligns more closely with the reality of text creation. Both textual and graphical elements (hints) accumulate over time, mirroring the irreversible nature of ink marks on paper in real world. There, once a sign is added — whether text or graphical — it remains forever, with subsequent operations building upon it: for instance, we may represent the deletion of a word by drawing a stroke on it; but the deleted word is still there. The digital model here mimics this reality, both for text and visuals: just like in the textual model (the chain) we have two sets of nodes and links which get added once and stay there forever, so in the visual model we accumulate signs on the display surface operation after operation. At the end, we fully match what is found in the carrier, while time — the fact that we added these signs one at a time, relating it to a specific editing operation — is represented by animations progressively revealing it and thus vividly presenting our reconstructive hypothesis. One of the best demonstrations of the intrinsically digital nature of such a dynamic, process-based edition is precisely the fact that there is no other way of showing its result than having it playing over time under the audience's eyes.[8]
This allows us to face the challenges posed by the peculiar scenario of *Venetian Epigrams*, while also trying to provide a model and a set of tools designed from the ground up for reuse in other projects. In fact, the whole data model, with its chain capable of dynamically generating annotated texts, its nodes and links, and the operations acting on them and representing the core of the reconstructed creative process, can be created by just using a web-based editor UI. Its data gets stored in a standard document database and can be easily dumped into a full textual encoding (based on JSON), as well as exported into TEI, RDF, etc. for purposes different from the highly interactive visualization illustrated above.
Even the visualization software required to provide its truly digital and native presentation, focused on progressively unveiling the making of a text, step after step over time, thus promoting a sequence of stills into a sort of historical movie, is part of a set of software tools designed for reuse in any third-party environment, from a static HTML page to any higher-level JS framework. To this end, these core components are packaged into open-source libraries and based on standard W3C technologies: for instance, while the backend chain-based logic can be available via REST API (distributed in Docker-based images), the frontend visualization is implemented by W3C web components, ready for integration and reuse with minimal effort. Even graphical assets, like the visuals catalog including hints and animations, not only can be shared across projects, but also edited via another web component designed right to support in their creation, based on a mixture of SVG and very small JS fragments leveraging a popular animation framework.
This also implies yet another engagement option for the audience: just like scholars working in this edition define their own reconstruction of the process, so that it can later be played before the user's eyes, the community itself could be involved in critically evaluating this work and even propose different reconstructions by leveraging the same tools used by the authors themselves. They would then see the result playing before them in real time and may later be integrated into the edition itself. This kind of flexibility and extension is precisely the purpose of a set of digital models and tools born to face the challenge of a specific work, but designed to provide also a scholarly paradigm and practical publishing system, thus fully embracing the flux of time, not only for the protean nature of such texts, but also for the ever-changing assets of digital editions.

REFERENCES

Andrews, T. & Diehr, F. & Efer, Th. & Kuczera, A. & Zundert, J. van (eds.). (2022). Graph Technologies in the Humanities - Proceedings 2020 CEUR Workshop Proceedings.
Last accessed September 13, 2024 at https://ceur-ws.org/Vol-3110/.

[8] See e.g. the demo at https://gve-rendition.surge.sh/?sample=h5-48 (the play button starts the show).

Buzzoni, M. & Cucurnia, D. & Fenu, C. & Rosselli Del Turco, R. & Tancredi, G. (2024). Progetto di edizione genetica digitale del Canzoniere manoscritto di U. Saba (1919-20). In: Me.Te. Digitali. Mediterraneo in rete tra testi e contesti, Antonio Di Silvestro & Daria Spampinato (eds.), 215-220.
Last accessed September 13, 2024 at https://hdl.handle.net/10278/5078681.

Cummings, J. (2018). "A world of difference: Myths and misconceptions about the {TEI}." In: Digital Scholarship in the Humanities.
Last accessed September 13, 2024 at https://doi.org/10.1093/llc/fqy071.

Genovesi, C. & Isolani, A. & Lo Rito, C. & Marotta, D. & Matteoli, M. & Tozzinni, C. (2009). "Topic Maps and MVD for the Representation of Interpretative Variants." In: Digital Humanities. Conference Abstract, University of Maryland, College Park, June 22-25, 2009. The Maryland Institute for Technology in the Humanities (MITH).
Last accessed September 13, 2024 at https://dhabstracts.library.virginia.edu/works/948.

Haentjens, D. R. & David, J. B. (2017). "It's more than just overlap: Text As Graph." Presented at Balisage: The Markup Conference, Washington, DC, August 1-4, 2017. In: Proceedings of Balisage: The Markup Conference 2017. Balisage Series on Markup Technologies, vol. 19.
Last accessed September 13, 2024 at https://doi.org/10.4242/BalisageVol19.Dekker01.

Oswald, S. (2014). Früchte einer großen Stadt – Goethes Venezianische Epigramme. Heidelberg: Winter.
Pierazzo, E. & Rehbein, M. & Galley, A. "An Encoding Model for Genetic Editions."
Last accessed September 13, 2024 at https://tei-c.org/Vault/TC/tcw19.html.

Sahle, P. (2016). "What Is a Scholarly Digital Edition?" In: Digital Scholarly Editing: Theories & Practices, edited by Matthew James Driscoll & Elena Pierazzo, 19-40. Open Book Publishers.
Last accessed September 13, 2024 at https://doi.org/10.11647/OBP.0095.02.

Schmidt, D. & Colomb, R. (2009). "A data structure for representing multi-version texts online." In: International Journal of Human-Computer Studies 6 (67), 497-514.
Last accessed September 13, 2024 at https://doi.org/10.1016/J.IJHCS.2009.02.001.

Schmidt, D. (2009). "Merging Multi-Version Texts: a Generic Solution to the Overlap Problem." Presented at Balisage: The Markup Conference 2009, Montréal, Canada, August 11-14, 2009. In: Proceedings of Balisage. The Markup Conference 2009. Balisage Series on Markup Technologies, vol. 3 (2009).
Last accessed September 13, 2024 at https://doi.org/10.4242/BalisageVol3.Schmidt01.

Schmidt, D. & Fiormonte, D. (2010). "Multi-Version Documents: A Digitisation Solution For Textual Cultural Heritage Artefacts." In: Intelligenza Artificiale 1 (4), 56-61.

Schmidt, D. & Eggert, P. (2019). "The Charles Harpur Critical Archive." In: International Journal of Digital Humanities.
Last accessed September 13, 2024 at https://doi.org/10.1007/s42803-019-00021-9.

Turska, M. & Cummings, J. & Rahtz, S. (2016). "Challenging the myth of presentation in digital editions." In: Journal of the Text Encoding Initiative 9.
Last accessed September 13, 2024 at https://doi.org/10.4000/jtei.1453.

Zittel, C. (2023). "'…denn was ich berühre, / Wird mir unter der Hand gleich ein behendes Gedicht'. Textuelle Metamorphosen und poetisches Kalkül in Goethes Venezianischen Epigrammen." In: Verwandlung der Worte. Textuelle Metamorphosen in Goethes Schriften. Fassungen, Ausgaben, Übersetzungen. Catalano G., & Sampaolo G. (eds.), Roma: Studi Germanici, 167-191.

1AIUCD0
102026
1
0101100

UNICA
UNIVERSITÀ
DEGLI STUDI
DI CAGLIARI

D.H.
UNICA.IT
Centro interdipartimentale per
l'Umanistica Digitale

ASSOCIAZIONE per
l'INFORMATICA UMANISTICA
e la CULTURA DIGITALE